Arizona State Science Standards (Grades 4-8 and High School)
satisfied by the Desert Tortoise Tracking Program.

Grade 7
Strand 1

Concept 1: Observations, Questions, and Hypotheses

Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.

PO 1. Formulate questions based on observations that lead to the development of a hypothesis.
(See M07-S2C1-01)

PO 2. Select appropriate resources for background information related to a question, for use in the design of a controlled investigation.
(See W07-S3C6-01, R07-S3C1-06, and R07-S3C2-03)

Concept 2: Scientific Testing (Investigating and Modeling)

Design and conduct controlled investigations.

PO 1. Demonstrate safe behavior and appropriate procedures (e.g., use and care of technology, materials, organisms) in all science inquiry.

PO 2. Design an investigation to test individual variables using scientific processes.

PO 3. Conduct a controlled investigation, utilizing multiple trials, to test a hypothesis using scientific processes.

PO 4. Perform measurements using appropriate scientific tools (e.g., balances, microscopes, probes, micrometers).

PO 5. Keep a record of observations, notes, sketches, questions, and ideas using tools such as written and/or computer logs.
(See W07-S3C2-01 and W07-S3C3-01)

Concept 3: Analysis and Conclusions

Analyze and interpret data to explain correlations and results; formulate new questions.

PO 1. Analyze data obtained in a scientific investigation to identify trends.
(See M07-S2C1-07 and M07-S2C1-08)

PO 3. Analyze results of data collection in order to accept or reject the hypothesis.

PO 4. Determine validity and reliability of results of an investigation.

PO 5. Formulate a conclusion based on data analysis.

PO 6. Refine hypotheses based on results from investigations.

PO 7. Formulate new questions based on the results of a previous investigation.

Concept 4: Communication
Communicate results of investigations.

PO 2. Display data collected from a controlled investigation.
(See M07-S2C1-03)

PO 3. Communicate the results of an investigation with appropriate use of qualitative and quantitative information.
(See W07-S3C2-01)

PO 5. Communicate the results and conclusion of the investigation.
(See W07-S3C6-02)

Strand 2

Concept 2: Nature of Scientific Knowledge
Understand how science is a process for generating knowledge.

PO 1. Describe how science is an ongoing process that changes in response to new information and discoveries.

PO 2. Describe how scientific knowledge is subject to change as new information and/or technology challenges prevailing theories.

PO 3. Apply the following scientific processes to other problem solving or decision making situations:

- *observing*
- *questioning*
- *communicating*
- *comparing*
- *measuring*
- *classifying*
- *predicting*
- *organizing data*
- *inferring*
- *generating hypotheses*
- *identifying variables*

Strand 3

Concept 1: Changes in Environments
Describe the interactions between human populations, natural hazards, and the environment.

PO 1. Analyze environmental risks (e.g., pollution, destruction of habitat) caused by human interaction with biological or geological systems.

PO 2. Analyze environmental benefits of the following human interactions with biological or geological systems:

- reforestation
- habitat restoration
- construction of dams

PO 3. Propose possible solutions to address the environmental risks in biological or geological systems.

Strand 4

Concept 3: Populations of Organisms in an Ecosystem

Analyze the relationships among various organisms and their environment.

PO 1. Compare food chains in a specified ecosystem and their corresponding food web.

PO 2. Explain how organisms obtain and use resources to develop and thrive in:

- niches
- predator/prey relationships

PO 3. Analyze the interactions of living organisms with their ecosystems:

- limiting factors
- carrying capacity

PO 6. Create a model of the interactions of living organisms within an ecosystem.